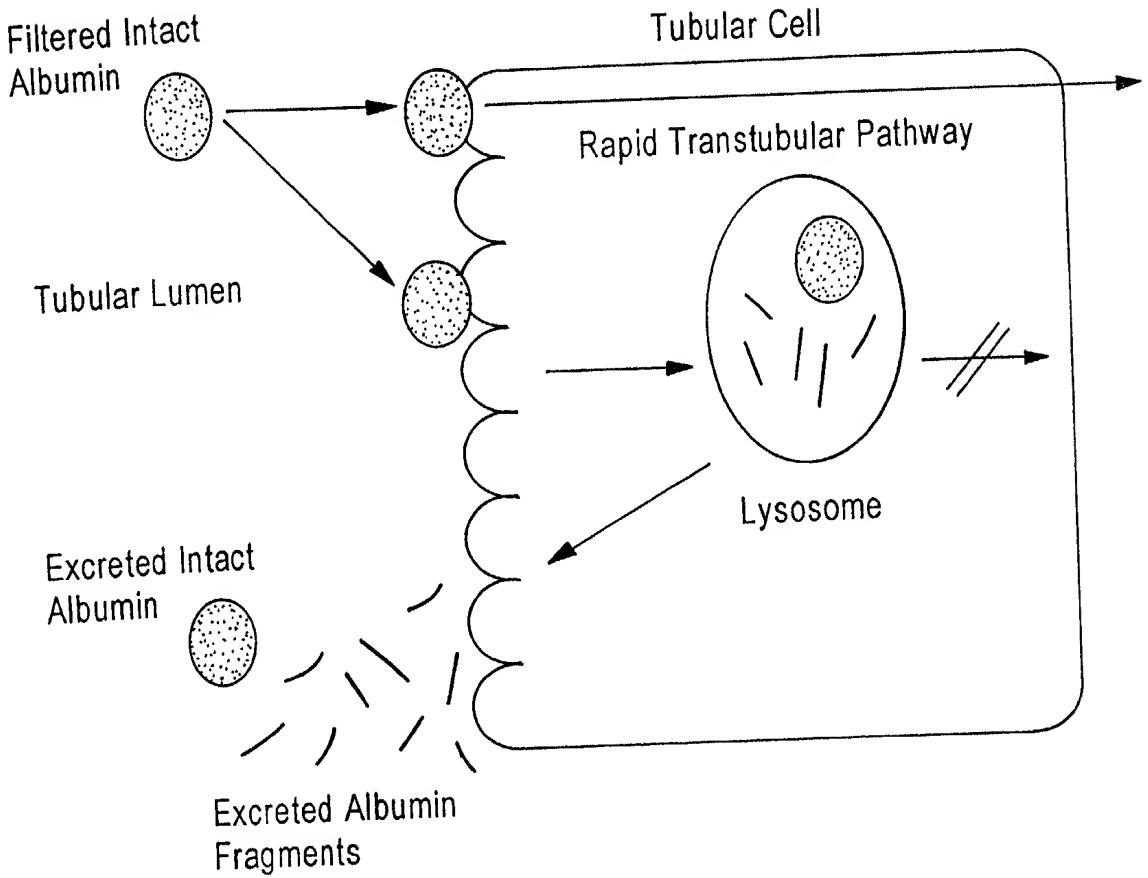

Filtered Intact Albumin
Tubular Cell
Rapid Transtubular Pathway
Tubular Lumen
Lysosome
Excreted Intact Albumin
Excreted Albumin Fragments

FIG. 1

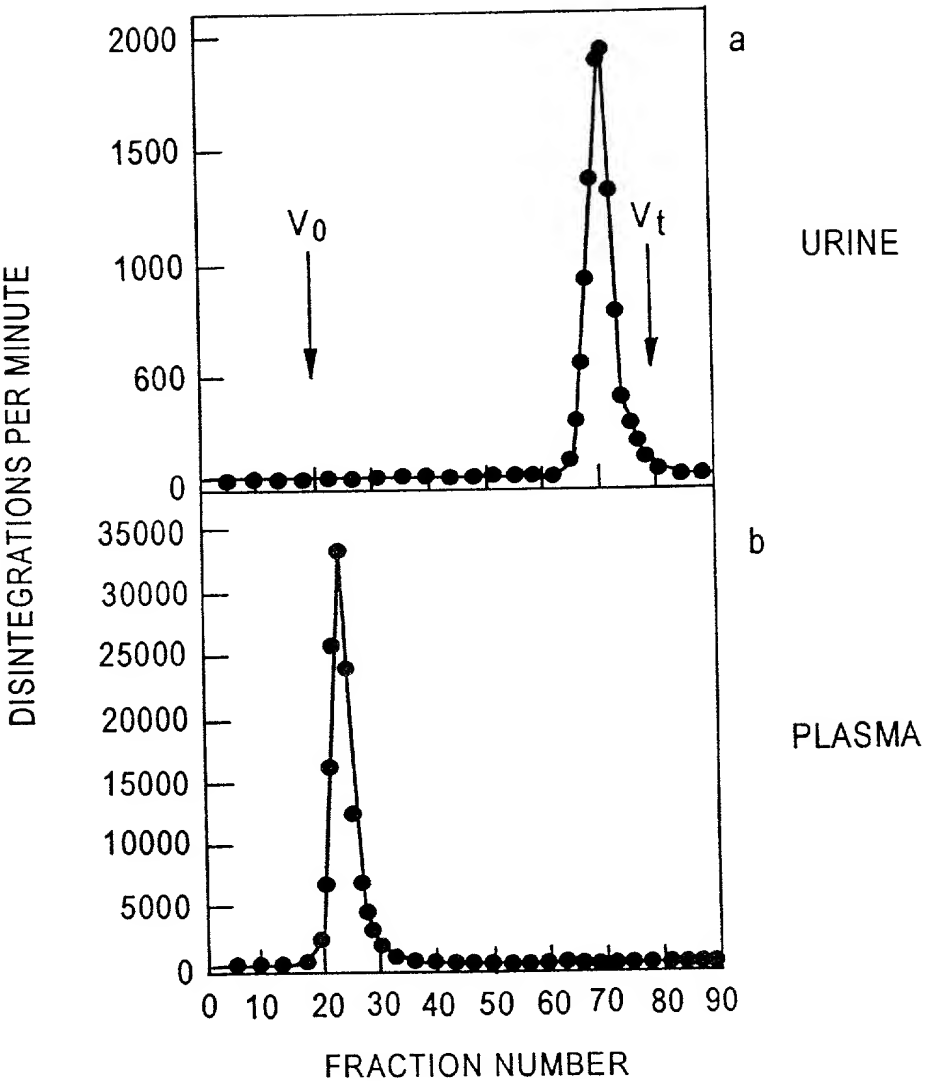

2000
1500
1000
600
0
a
V_0
V_t
URINE
35000
30000
25000
20000
15000
10000
5000
0
b
PLASMA
DISINTEGRATIONS PER MINUTE
0 10 20 30 40 50 60 70 80 90
FRACTION NUMBER

FIG. 2

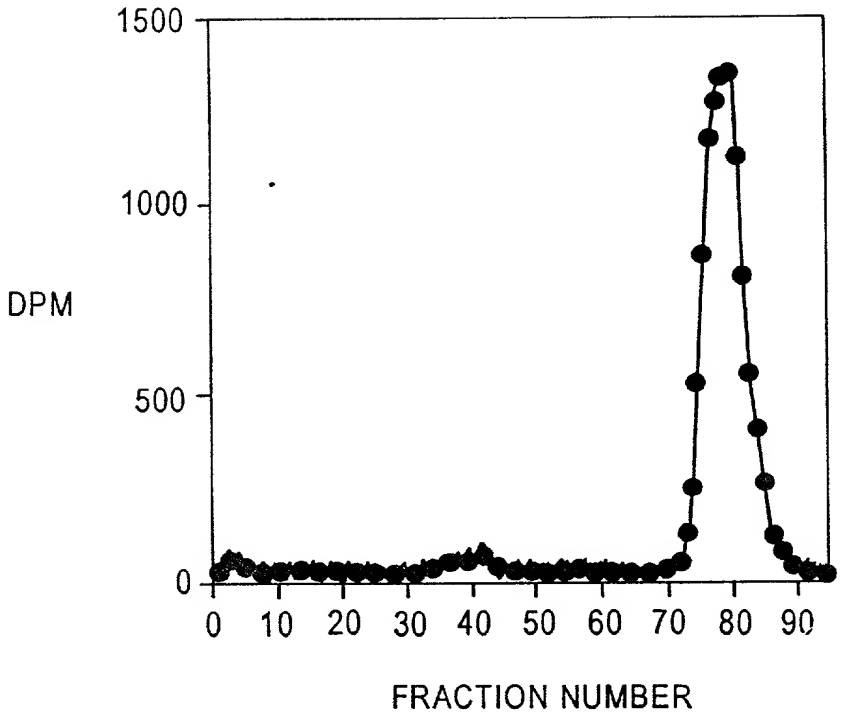


FIG. 3

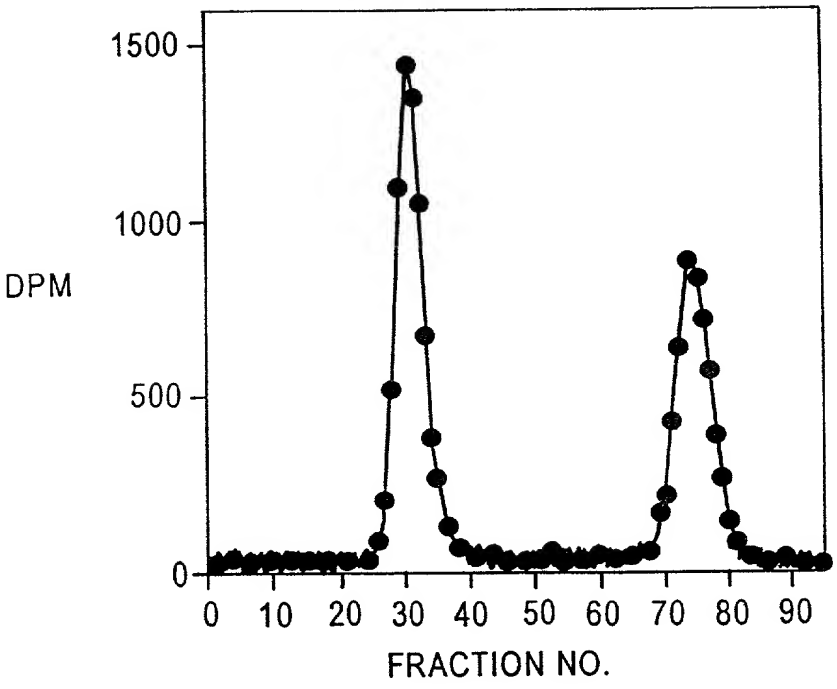
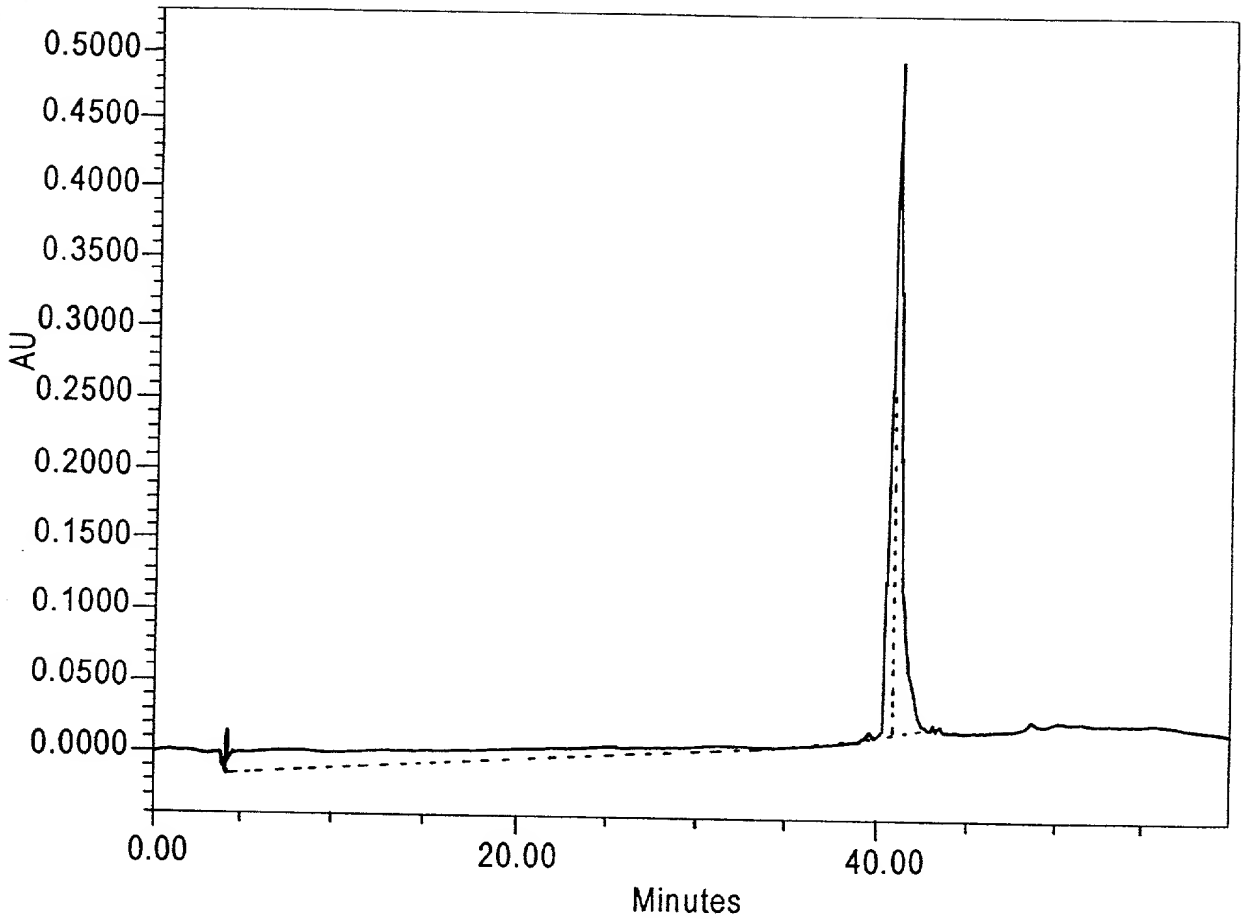


FIG. 4

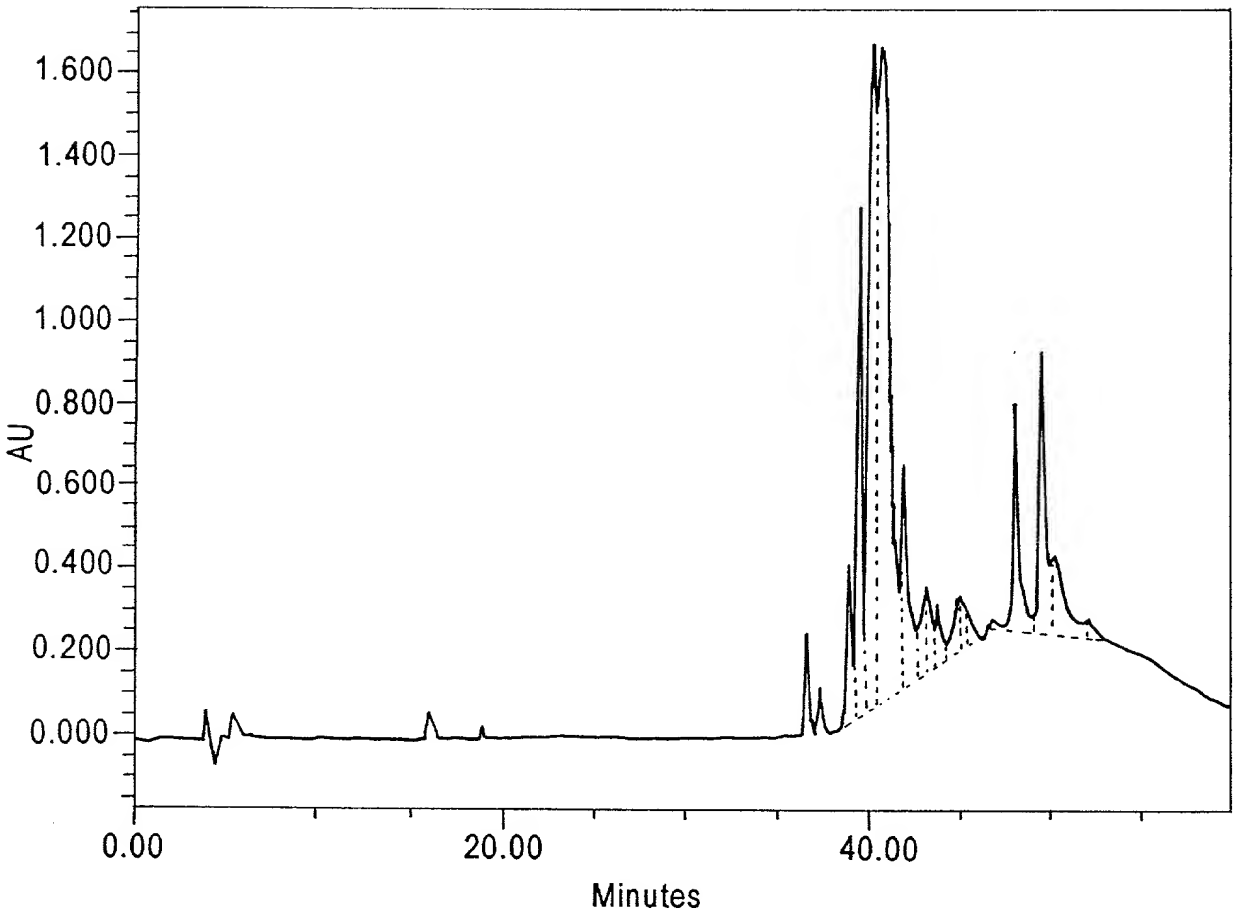
FIG. 5



Peak Results

#	Name	Ret Time (min)	Area (uV*sec)	Height (uV)	Amount	Int Type
1		4.117	329140	40683		BB
2		4.883	15767507	16240		BB
3		39.467	101020	6703		BB
4		40.000	46216	3171		BB
5		40.733	3138458	242228		BV
6		41.017	13063671	486192		VB
7		43.233	62005	5618		BV
8		43.700	33150	2909		VB
9		48.683	76368	3554		BB

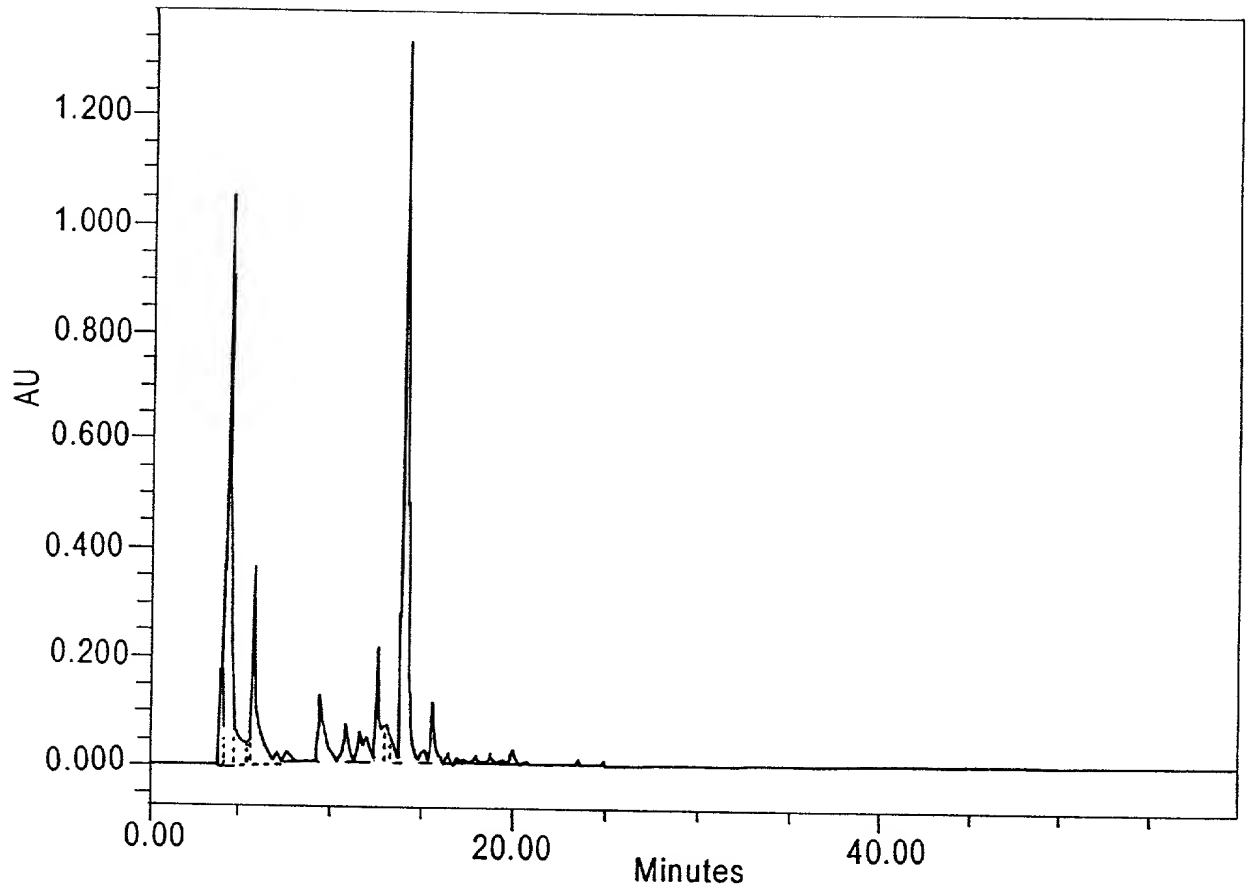
FIG. 6



Peak Results

#	Name	Ret Time (min)	Area (uV*sec)	Height (uV)	Amount	Int Type
1		4.133	1802825	122050		BB
2		4.933	1874787	51415		BV
3		5.550	2903127	94067		VB
4		14.633	31135	3556		BB
5		15.617	54780	5951		BV
6		16.117	1518301	71355		VB
7		18.817	354458	32687		BB
8		28.717	16597	2098		BB
9		31.967	41230	4687		BB
10		32.567	107938	2454		BB
11		36.633	3763801	256381		BV
12		37.383	2135643	127492		VV
13		37.933	3054	972		VB
14		38.233	16226	2010		BB
15		38.950	8424624	387355		BV

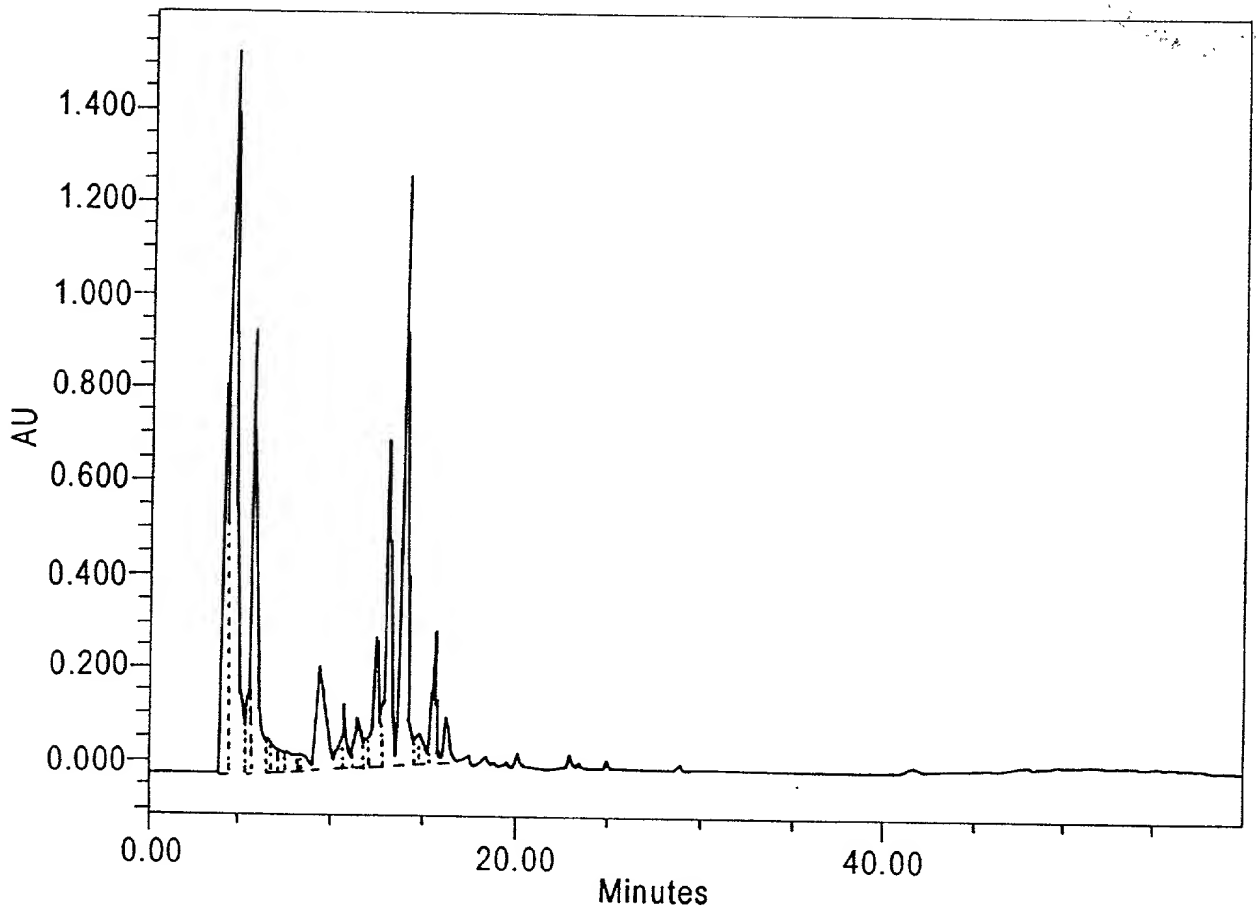
FIG. 7



Peak Results

#	Name	Ret Time (min)	Area (uV*sec)	Height (uV)	Amount	Int Type
1		4.067	2434486	185800		BV
2		4.483	16280311	1058547		VV
3		4.833	3864081	191585		VV
4		5.600	706286	46936		VV
5		5.983	6703449	371298		VV
6		7.133	451038	24299		VV
7		7.617	542790	22245		VB
8		9.600	3068571	128855		BV
9		10.333	151779	12552		VV
10		10.767	284984	25596		VV
11		11.017	919890	80160		VV
12		11.350	108494	10375		VV
13		11.650	738559	61334		VV
14		12.033	705972	48248		VV
15		12.200	429100	36385		VV

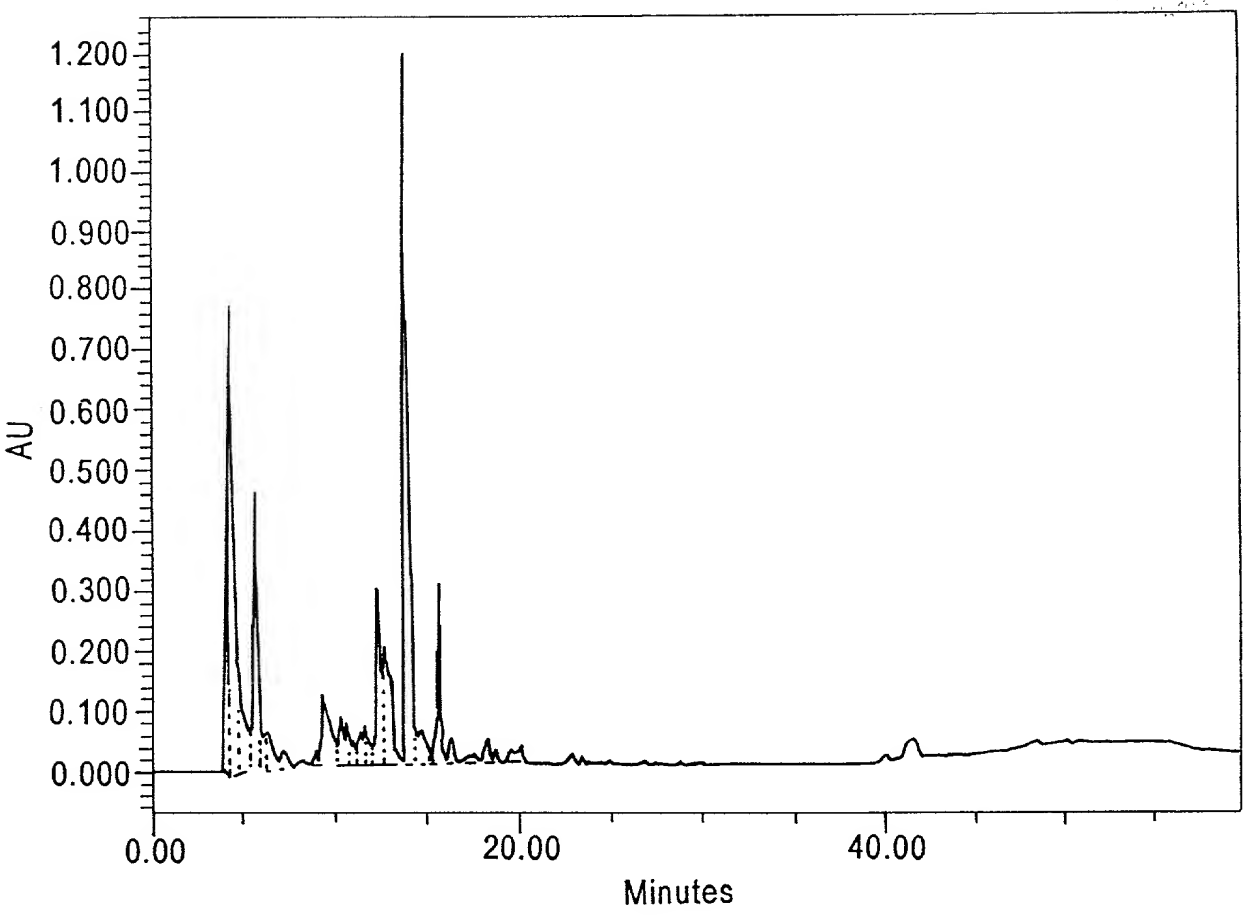
FIG. 8



Peak Results

#	Name	Ret Time (min)	Area (uV*sec)	Height (uV)	Amount	Int Type
1		4.067	11142185	841146		BV
2		4.467	42897717	1567808		VV
3		5.333	2771843	185077		VV
4		5.750	16970479	962668		VV
5		6.433	1506454	80128		VV
6		6.800	1187124	68430		VV
7		7.150	1105355	55641		VV
8		7.500	322563	40826		VV
9		7.633	1108215	42173		VV
10		8.183	522250	36801		VV
11		8.400	1110198	40131		VV
12		9.317	7318394	222305		VV
13		10.400	866046	57467		VV
14		10.667	2300590	148511		VV
15		11.050	399236	32665		VV

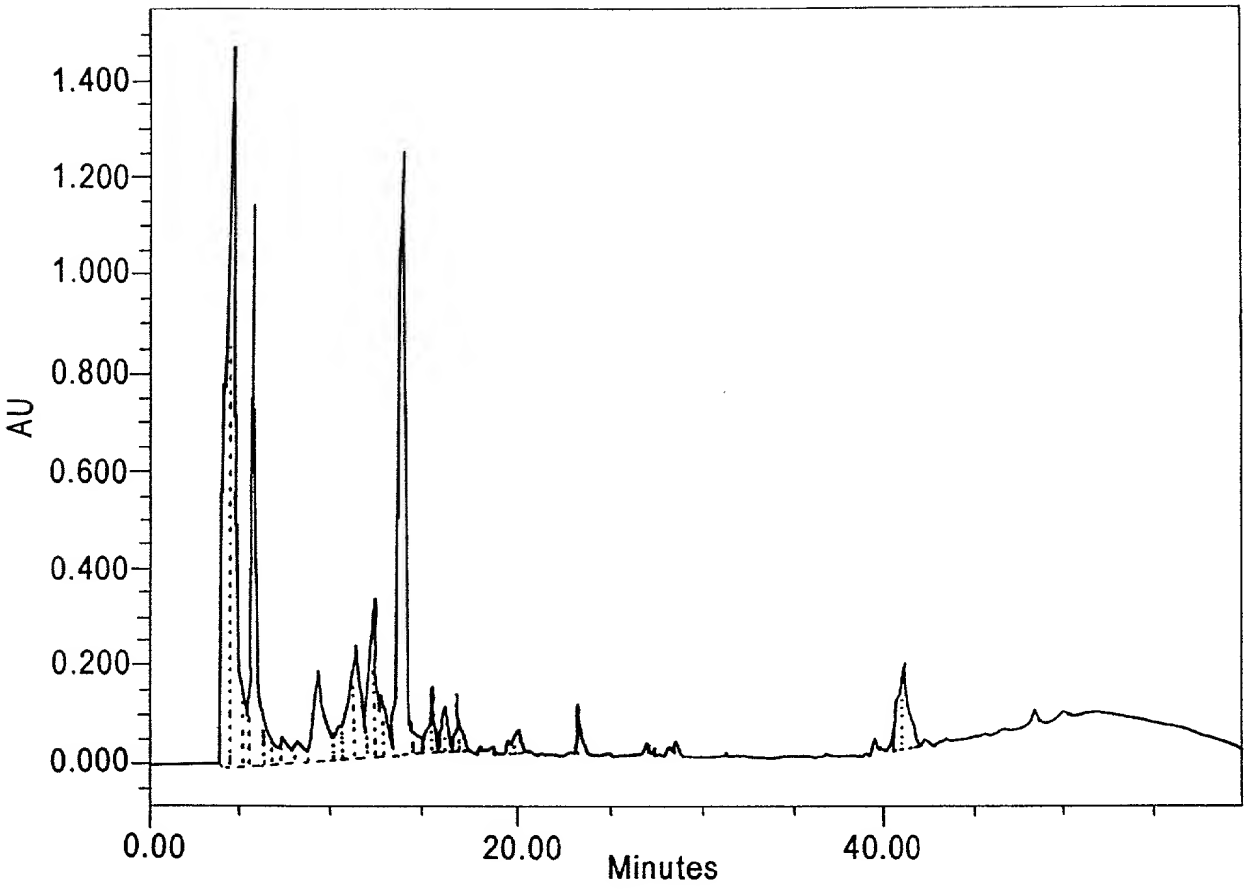
FIG. 9



Peak Results

#	Name	Ret Time (min)	Area (uV*sec)	Height (uV)	Amount	Int Type
1		4.083	3547997	287640		BV
2		4.417	13468709	786559		VV
3		4.767	4659330	247452		VV
4		5.750	8516445	470707		VV
5		6.317	2011722	70109		VV
6		7.200	883132	30217		VB
7		8.150	94619	7076		BB
8		9.017	439910	25556		BV
9		9.517	3872051	120729		VV
10		10.333	1190270	78799		VV
11		10.650	1054310	76753		VV
12		11.033	385789	28539		VV
13		11.333	761432	56564		VV
14		11.700	1033818	69004		VV
15		11.950	384784	35582		VV

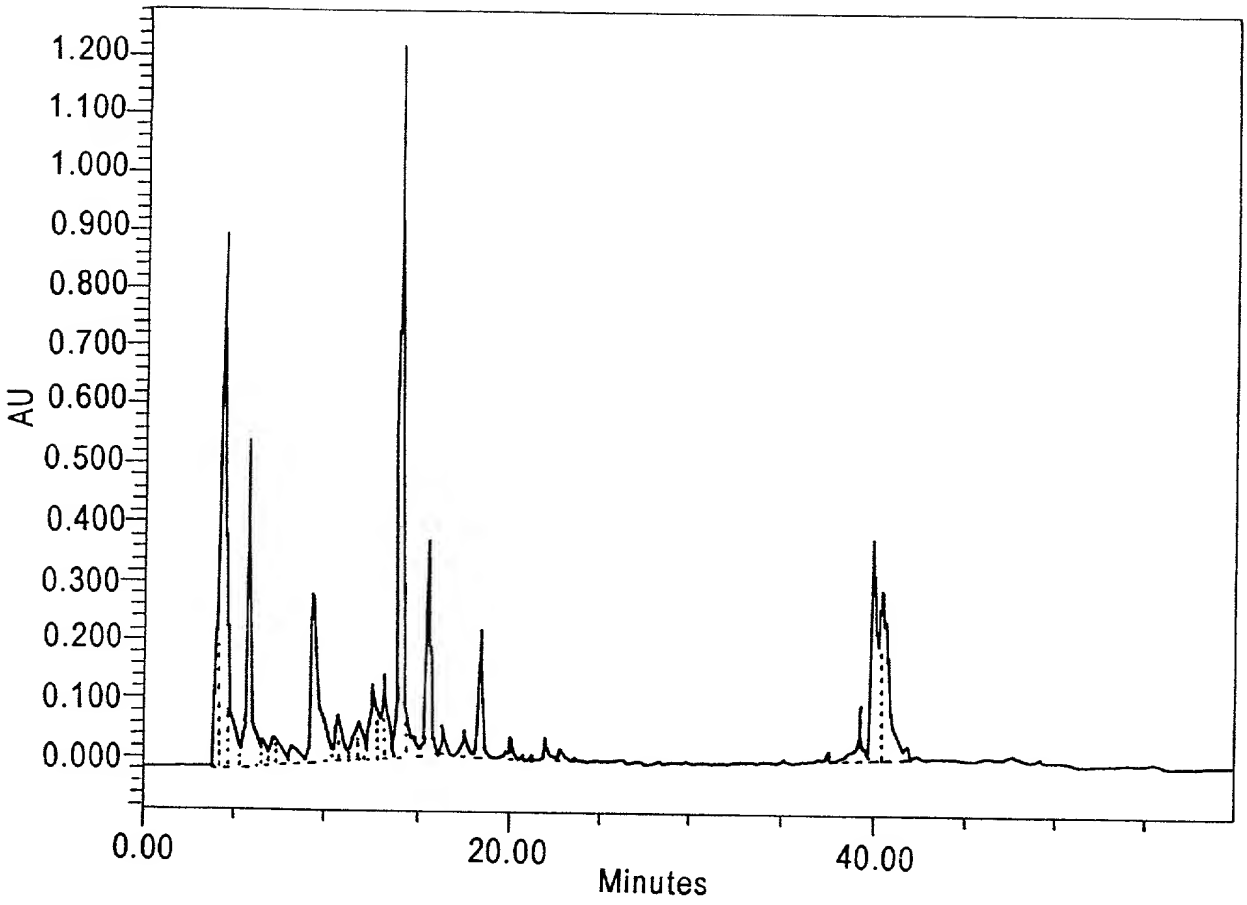
FIG. 10



Peak Results

#	Name	Ret Time (min)	Area (uV*sec)	Height (uV)	Amount	Int Type
1		4.083	10518737	792810		BV
2		4.367	14687929	1410889		VV
3		4.533	22637504	1494339		VV
4		5.163	3593396	219436		VV
5		5.717	22692299	1152174		VV
6		6.817	960777	60477		VV
7		7.150	682488	44596		VV
8		7.500	1795219	58004		VV
9		8.250	1518279	43057		VV
10		9.250	7251773	190341		VV
11		10.367	1000343	60821		VV
12		10.633	1192302	77226		VV
13		11.050	2788523	178468		VV
14		11.417	6160036	248690		VV
15		12.200	4008326	298350		VV

FIG. 11



Peak Results

#	Name	Ret Time (min)	Area (uV*sec)	Height (uV)	Amount	Int Type
1		4.100	2979946	236299		BV
2		4.450	15028113	921410		VV
3		4.817	4812815	249684		VV
4		5.550	814070	71678		VV
5		5.850	9688029	563550		VV
6		6.600	914291	48992		VV
7		7.000	272597	28204		VV
8		7.250	1918070	53043		VV
9		8.267	1161101	29288		VV
10		9.367	9258559	294071		VV
11		10.617	903487	62562		VV
12		10.833	1216206	83275		VV
13		11.250	178790	15563		VV
14		11.550	532841	42407		VV
15		11.867	1315340	70286		VV

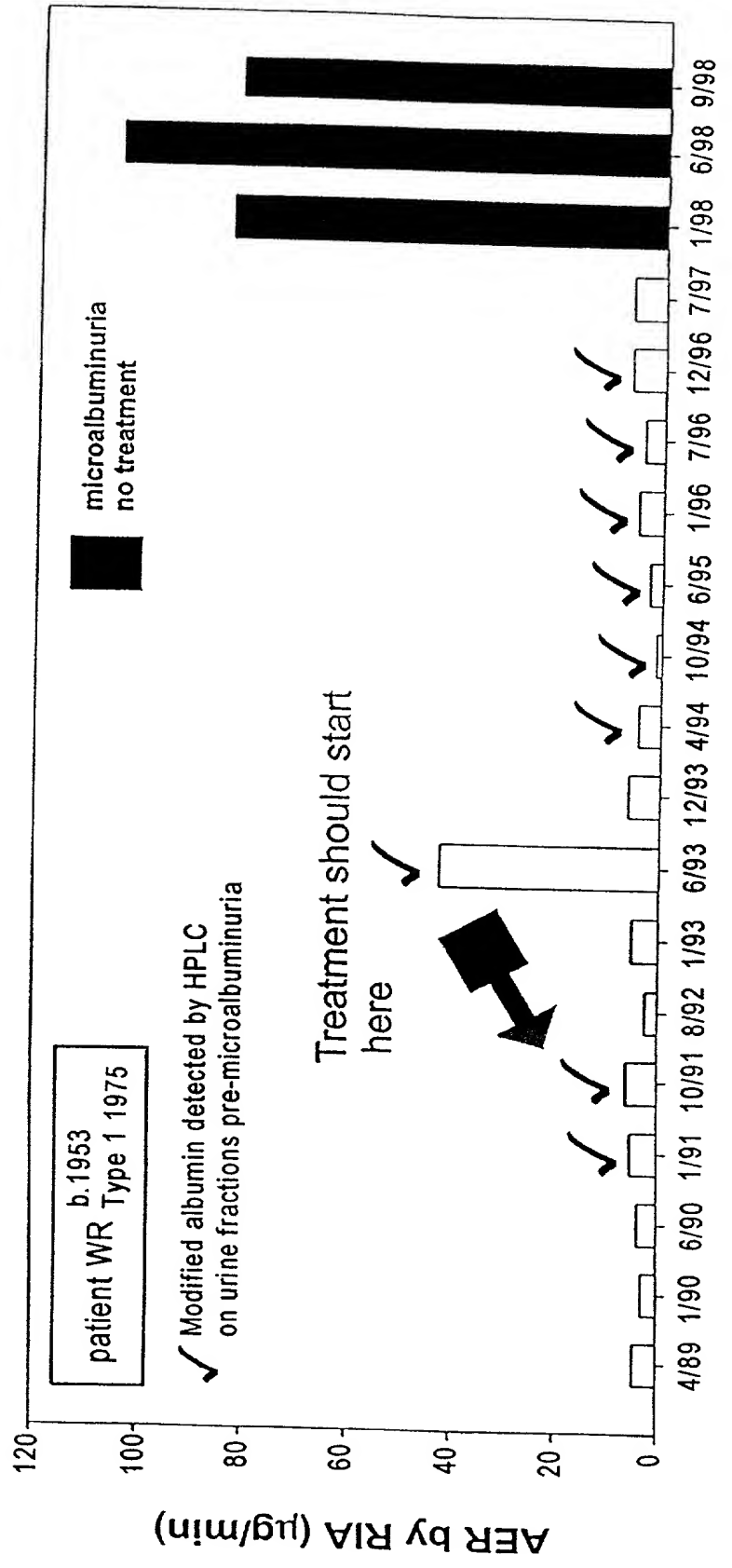

patient WR b.1953 Type 1 1975
Modified albumin detected by HPLC on urine fractions pre-microalbuminuria
microalbuminuria no treatment
Treatment should start here
AER by RIA (µg/min)
120
100
80
60
40
20
0
4/89 1/90 6/90 1/91 10/91 8/92 1/93 6/93 12/93 4/94 10/94 6/95 1/96 7/96 12/96 7/97 1/98 6/98 9/98
Month/Year of testing

FIG. 12

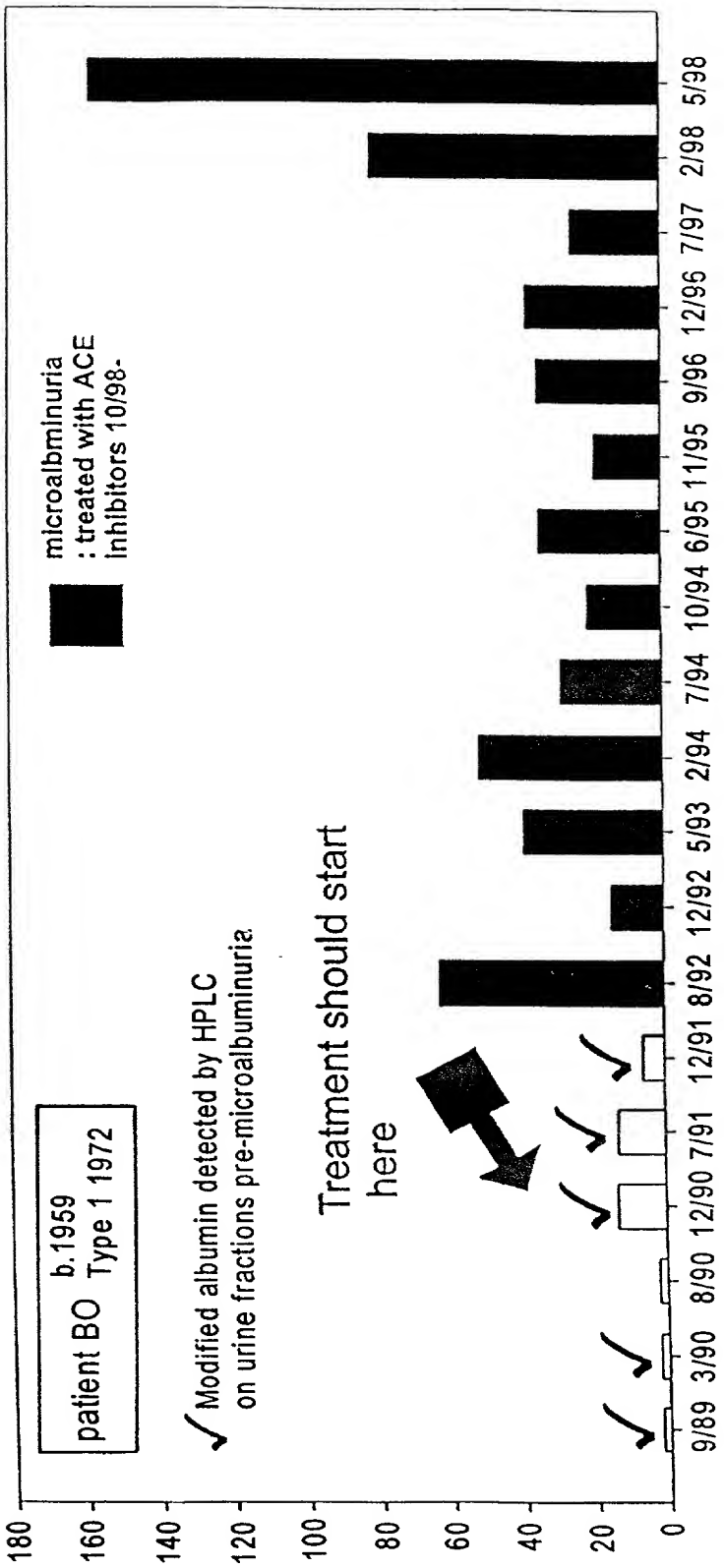

patient BO b.1959
Type 1 1972
Modified albumin detected by HPLC
on urine fractions pre-microalbuminuria
Treatment should start
here
microalbminuria
: treated with ACE
inhibitors 10/98-
180
160
140
120
100
80
60
40
20
0
9/89
3/90
8/90
12/90
7/91
12/91
8/92
12/92
5/93
2/94
7/94
10/94
6/95
11/95
9/96
12/96
7/97
2/98
5/98
Month/Year of testing

FIG. 13

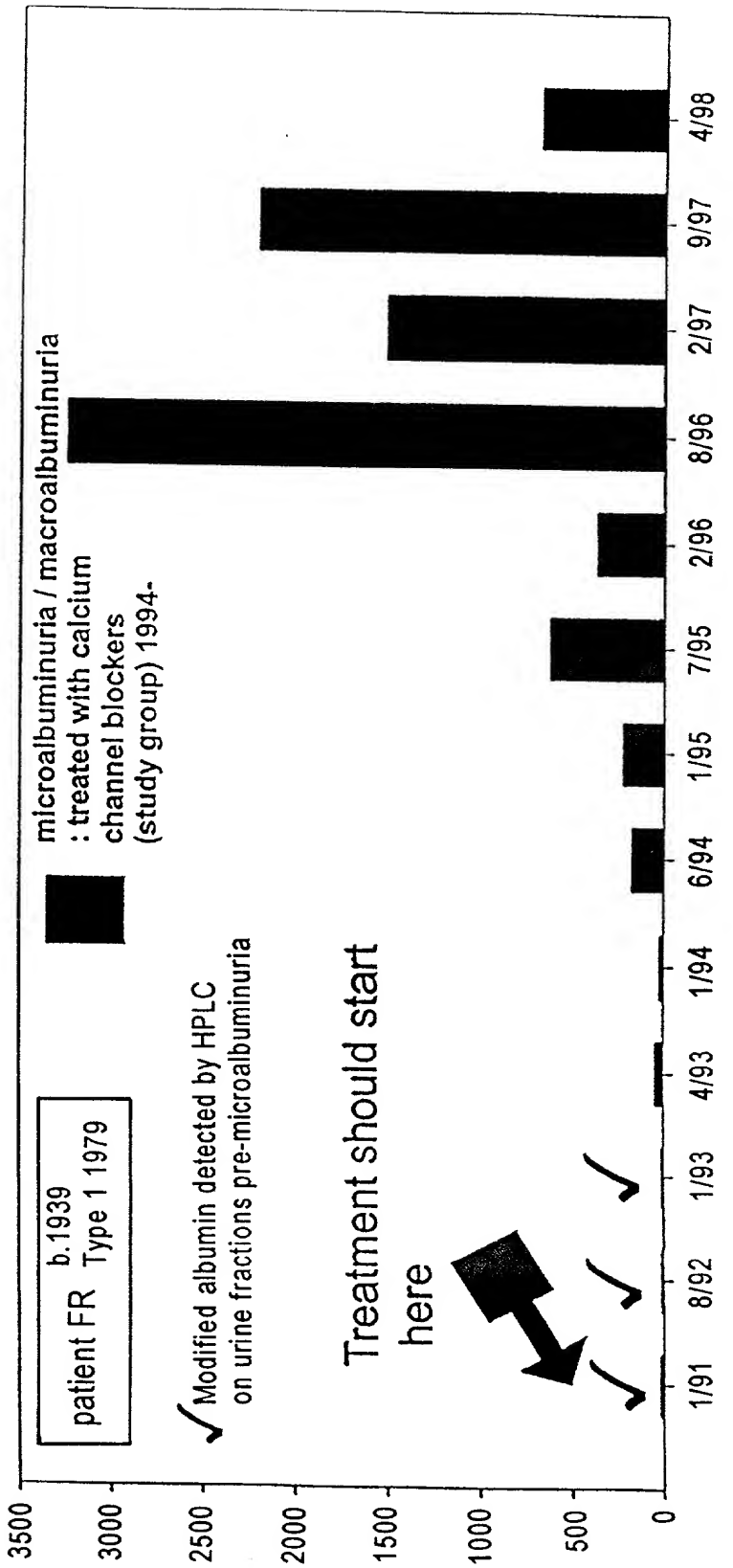

patient FR b.1939
Type 1 1979
microalbuminuria / macroalbuminuria
: treated with calcium
channel blockers
(study group) 1994-
Modified albumin detected by HPLC
on urine fractions pre-microalbuminuria
Treatment should start
here
3500
3000
2500
2000
1500
1000
500
0
1/91
8/92
1/93
4/93
1/94
6/94
1/95
7/95
2/96
8/96
2/97
9/97
4/98
Month/Year of testing

FIG. 14

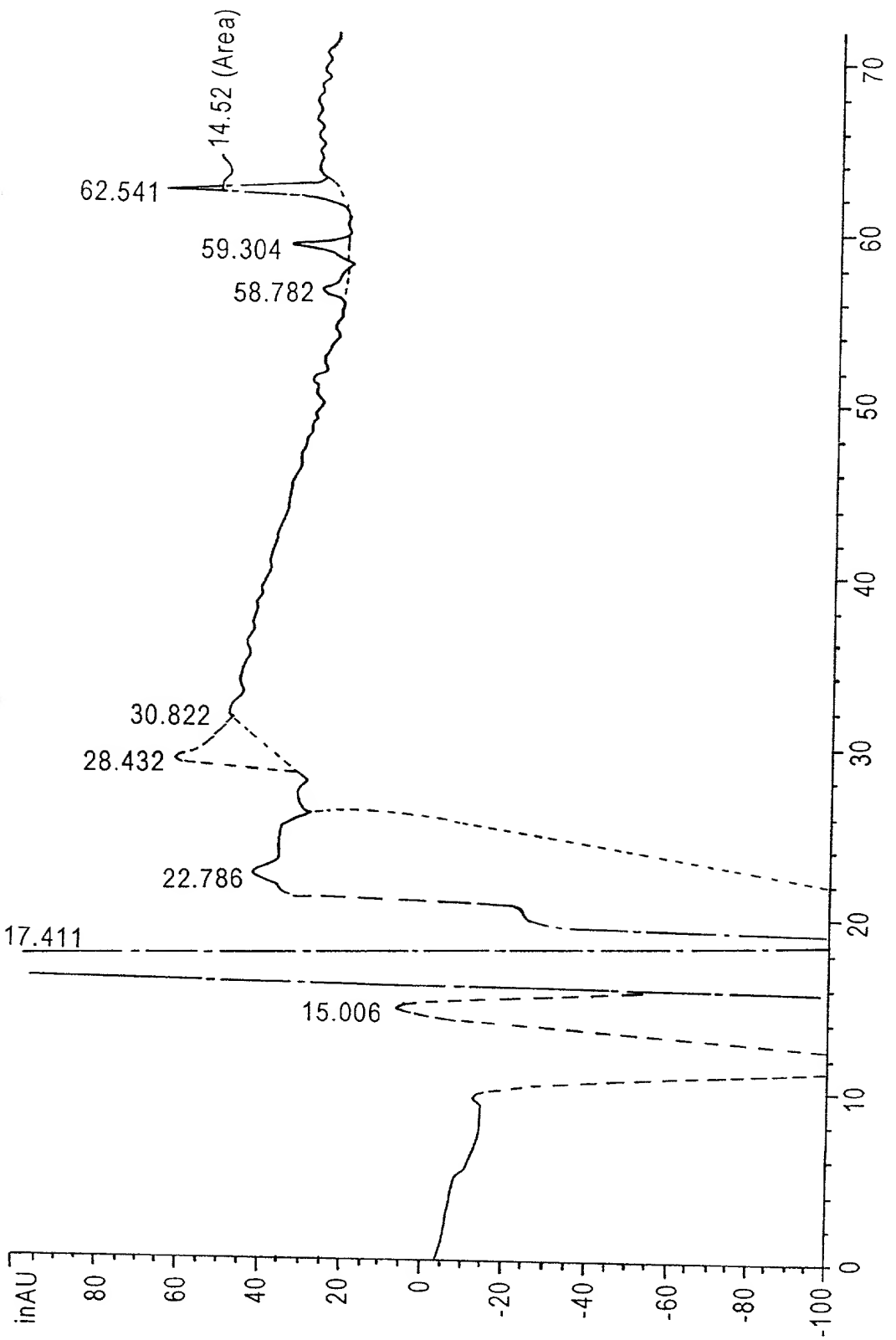

14.52 (Area)
62.541
59.304
58.782
30.822
28.432
22.786
17.411
15.006
inAU
80
60
40
20
0
-20
-40
-60
-80
-100
0
10
20
30
40
50
60
70

FIG. 15

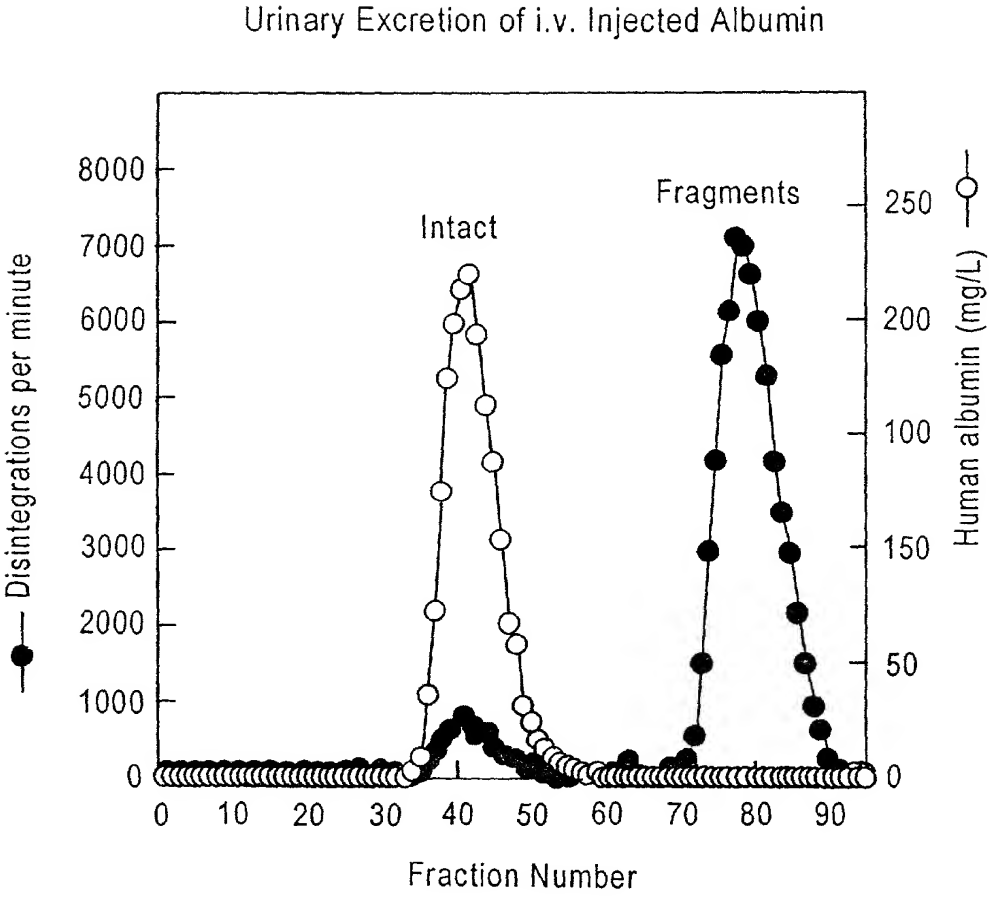

Urinary Excretion of i.v. Injected Albumin
Intact
Fragments
Disintegrations per minute
Human albumin (mg/L)
Fraction Number
0
1000
2000
3000
4000
5000
6000
7000
8000
50
100
150
200
250
0
10
20
30
40
50
60
70
80
90

FIG. 16

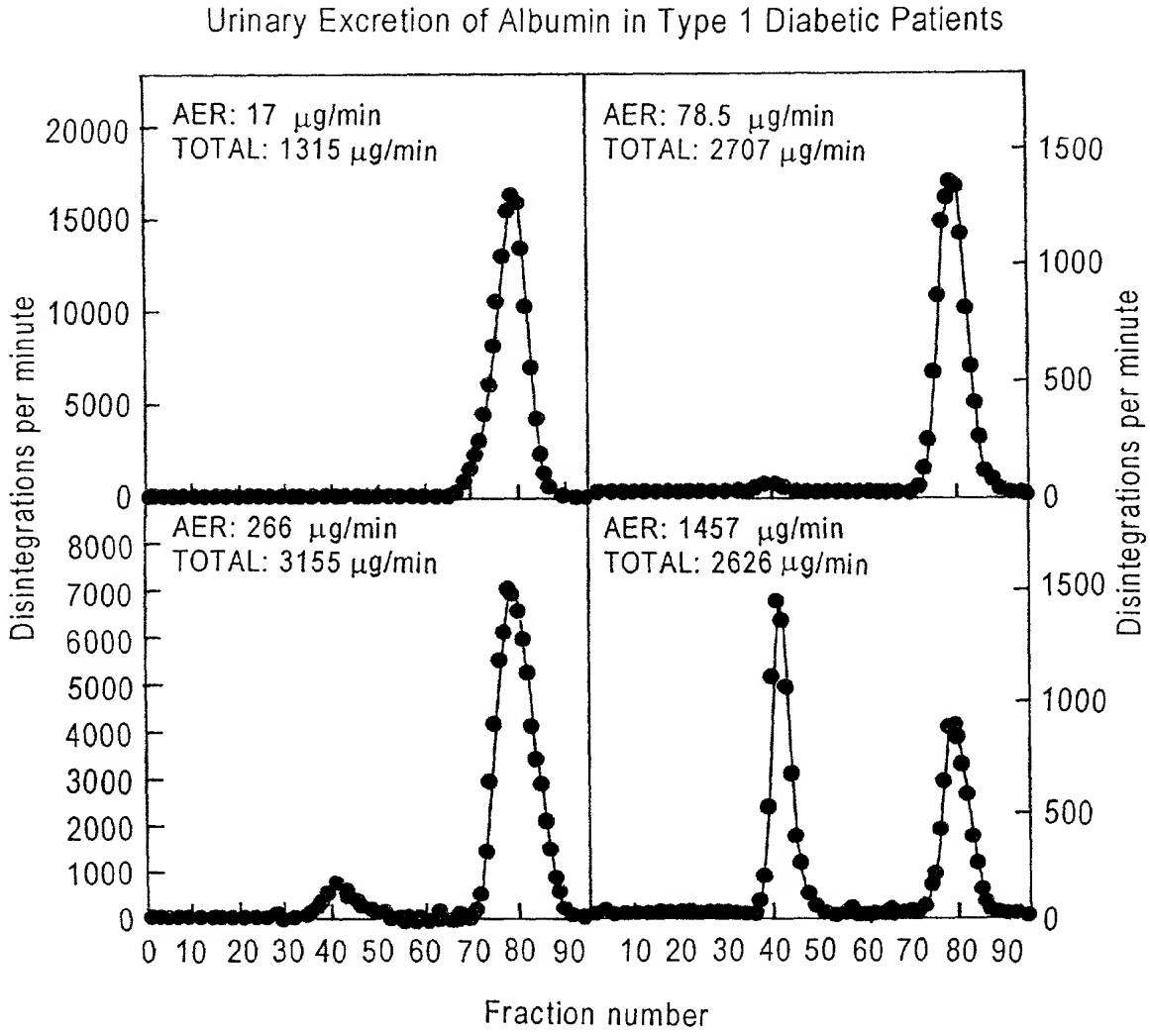

Urinary Excretion of Albumin in Type 1 Diabetic Patients
AER: 17 µg/min
TOTAL: 1315 µg/min
AER: 78.5 µg/min
TOTAL: 2707 µg/min
AER: 266 µg/min
TOTAL: 3155 µg/min
AER: 1457 µg/min
TOTAL: 2626 µg/min
Disintegrations per minute
Disintegrations per minute
Fraction number
0 10 20 30 40 50 60 70 80 90
10 20 30 40 50 60 70 80 90

FIG. 17